

DATE: 01/23/2003 P. 6

TIME: 08:29:28

160 RECEIVED
JAN 2 9 2002
TECH CENTER 1600/2900

# RAW SEQUENCE LISTING

4 <110> AFPLICANT: Boehringer Ingelheim (Canada) Ltd.

PATENT APPLICATION: US/09/368,670C

Input Set : A:\Corrected sequence listing#2.txt

Input Set: A:\Corrected sequence listing#2.txt
Output Set: N:\CRF4\01232003\I368670C.raw

```
6 < 120 > TITLE OF INVENTION: Hepatitis C Inhibitor Feptides
 9 <130> FILE REFERENCE: 13/063-2-C2
11 <1400 CUPRENT APPLICATION NUMBER: 09/368,670C
12 <141> CUEREMI FILING DATE: 1999-08-05
14 <1500 PRIOR APPLICATION NUMBER: 60,095,945
15 <151> PRIOR FILING DATE: 1998-08-10
17 <1300 PRIOR APPLICATION NUMBER: 60,055,186
18 01510 PFIOR WILING DATE: 1997-08-11
  <1500 PETOF APPLICATION NUMBER: 09/131,758</p>
   Tell NUMBER OF SEQ ID NOS: 53
    173 COFTWARE: FastSEQ for Windows Version 4.0
27 K2100 SEQ ID NO: 1
28 <2110 LENGTH: 6
29 <212> TYPE: PRT
30 <210 ORGANISM: Hepatitis C
32 <2200 FEATURE:
33 <221> NAME/HEY: VARIANT
34 <2221 LOCATION: 1
Bu <223 OTHER INFORMATION: Asp is capped with Ac
37 <4000 SEQUENCE: 1
*8 Asp Asp lle Val Pro Cys
54 1
42 5210 2EQ IICNO: 2
43 <2:1> LENGTH: 12
44 KRIZE TYPE: PRT
45 Pariso ORGANISM: Hepatitis C
47 - 400% PEOTENTE: 2
4s Asp Asp lie (a) Fro Cys Ser Met Ser Tyr Thr Trp
4 + 3
  s kvija (FÑ9Th: 1
   1.12 1.11 1.15
50 - 213 - GRGANISM: Hepatitis C
DI SERIE FFAIUFF:
58 KERI> NAME/KEY: VARIANT
58 €2.22 FOCATION: 1
60 <222> OTHER INFORMATION: Asso is cassed with biotin
62 <221> NAME/KEY: VARIANT
64 × 127 × PERER INFORMATIVE: Typ In It singled
```

W--> 66 < 400 > 3

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```
67 Asp Asp Ile Val Pro Cys Ser Met Scr Tyr Thr Trp
                          5
     71 <210 - SEO ID NO: 4
     72 <211 · LEUGTH: ←
     7 + 3212 - TYPE: PHT
     71 C213 · OFMANISM: Hepatitis C
     76 <220 FEATURE:
     77 HRRI - NAME/KEY: VARIANT
     7 - 1222 - LOTATION: 4
     74 < 223 - OTHER INFORMATION: Tyr is iodinated
     81 (100) SEQUENCE: 4
     8. Jer Met : er Tyr Thr Trp
     8 1
     86 (210) SEO ID NO: 5
     8 1 <211 - LENGTH: 17
     85 -C2120-TYPE: PHI
     8 + <≥130 OF WANISM: Hepatitis C
     91 <400. SEQUENCE: 5
     9 Lvd Ldg (ig Ger Val Val Ile Val Gly Arg Ilo (lo Lou Sor Cly Arg
     91 Lys
     9° < 100 SEQUED NO: 6
     9 + <2110 LENGTH: 11
     100 82111 TYPE: PAT
     1-1 (21:1 OEGANISM: Repatitis C
     1:3 <2200 FEATURE:
     104 K2210 NAME, HEY: VARIANT
     105 KRRIF LOCATION:
     1465 (225) OTHER INFORMATION: App is derivatized with anthranilyl
     106 KREEL NAME, REY: VARIANT
     1 (3) <2230 LOCATION: 6
     110 122R OTHER INFORMATION: Xau Abu
W--> 112 <221> VARIANT
     115 -.2200 LOCAULON: -.6)....(7)
     1:4:1993 OF HER IMPORMATION: Abu-A between 6 and 7 is C(O)-O
W--> 116 <221> VARIANT
     1.7 \times 2211 \text{ LOCATION: } 9
     199 - 22 Boother IMPSAMATIST: Two is desirational with Remov
W--> 120 <400> 6
W--> 121 Asp Asp Ile Val Pro Xaa Ala Met Tyr Thr Trp
         and the second second
     1.6 <211. L:NGCH: 4
     to the section of the DE
     118 - 213: OFGANISM: Hopatitis C
     1 C KOSO: PLATUPE:
     1:1 - 2210 NAME, KEY: VARIANT
     1.2 <2220 LCCATION: 1
     153 <223> OTHER INFORMATION: Ala is succinylated
```

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```
135 KO215 NAME/KEY: VARIANT
     136 0.225 LOCATION: 4
     157 COOP OTHER INFORMATION: Phe is derivatized with para-mitro-amiline
W--> 139 <400> 7
     140 Ala Ala Pro Phe
     141 !
     144 : 100 JEQ ID NO: 8
     137 t. 115 EFNGTH: 6
     146 L LLE TYPE: PRT
     147 - 130 ORGANISM: Repatitis C
     143 -MECH FEATURE:
     190 -0000 MAME KEY: VARIANT
     161 HIBER LOCATION:
     192 - LESS OTHER INFORMATION: Asp is acetylated
     154 H4000 PEQUENCE: 8
     155 Asp Asp Ile Val Pro Cys
     116 3
     15 # 50 1005 JHQ 1D NO: 3
     146 HOURS LENGTH: 6
                A . - : . 1
     160 C. 188 GREATLIM: Hepathtip C
     194 C. TO FEATURE:
     168 FIGHT NAME/REY: VARIANT
     100 -0.220 LOCATION: 1
     167 ROSS OTHER INFORMATION: Glu is acetylated
     169 K400% SEQUENCE: 9
     170 Glu Asp The Val Pro Cys
     171
     174 ... 10. SEG IP NO: 10
     178 -4.11> DENGTH: 5
     176 K. 125 TYEE: PRT
     177 : 13: OFCAMPEM: Hepatitis C
     179 -0.20: FEATURE:
     180 K.21: NAME BOU: WARTANT
     181 < 225 LOCATION:
     16. 1.23 Of TR INFORMATION: Asp is capped with IVAL
     184 <400° SEQUENCE: 10
     INCOME IN MAJORES CYS
     186
     Francis of Chapter to
     136. <. 11. LENGTH: 6
              lan olise ObsAMD.M: Hepatotik o
     1944 Stroke thongraphs:
     195 < 21 NAMEZEET: VARIANT
     196 k.22° LOCATION: 1
197 k.23° OTHER INFORMATION: Asp is acetylated
```

149 <400 + DEQUENCE: 11 200 Amp Glu Ile Val Pro Cys

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Input Set : A:\Corrected sequence listing#2.txt
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```
201 1
              204 <2105 SEQ ID NO: 12
              205 <211 LEUGTH: 6
              2 06 < 11. TYPE: PRT
              Hepatitis C
              209 < 22 FEATURE:
              210 K 21 NAME (KEY: VARIANT
              BIL K.BI - LOTATION: 1
              21.2 K.A. OTHER INFORMATION: Asp is acetylated
              374 KADER SEMBENCE: 12
             215 Amp Val Ile Val Pro Cys
             2.16
              319 < 10 + SEQ 10 MO: 33
              Bull < 11 - LENGTH: 6
              Roll < 120 TYPE: PRT
              R.L. K. 150 OF PAMESM: Hepatitis C
              2.4 < .US FEATURE:
              Publication NAME REY: VARIANT
              2.6 % 1.1 LOMATION: 2
              2. T < . 15 OTHER INFORMATION: Xaa=Tbg
                    TAMES A PROPERTY AND A STANCT
              . ... com a series and contraction of the series of the se
              del k...e. OTHER INFORMATION: Asp is accetylated
W--> 233 <400> 13
W--> 234 Asp Xaa Ile Val Pro Cys
              1 - 1
              HOR K. THE SEC ID NO: 14
               159 K. 111 DENGTH: 6
              NAC K. NIN TYPE: PHT
               141 K. 180 ORGANISM: Pepatitis C
             BAS K. NOR FEATURE:
              344 < DI NAME/KEY: VARIANT
             335 KILL LOCATION: 1
               \texttt{M}\,\texttt{b} < 1.80 OTHER INFORMATION: Asp is acetyrated
             248 × 4000 SEQUENCE: 14
               339 Acp Asp Val Val Pro Cys
             253 K. 100 SEQ II NO: 15
               354 KIDDI BENGTH: 6
              200 to ... lifeE: bki
              256 - D. C. ORGANISM: Hepatitis C.
                ere i var erammet :
              159 K.111 NAME/FFY: WARIANT
              oko (j. 1907) A 1911:
BGI KIRK OTHER INFORMATION: Yaa Chg
             263 S.Z. NAME, REY: VARIAN.
             264 <1210 LOCATION:
             265 S. 252 OTHER INFORMATION: Asp is adetylated
W--> 267 <400> 15
```

PATENT APPLICATION: US/09/368,670C

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Input Set : A:\Corrected sequence listing#2.txt
Output Set : N:\CRF4\01232003\1368670C.raw

# W--> 268 Asp Asp Xaa Val Pro Cys 269 1 272 <210> SEQ ID NO: 16 273 < 11> LENGTH: 6 274 1.122 TYPE: FRT 1175 C110: ORGANISM: Hepatitis C 277 - 1.200 PEATURE: 178 N. 212 NAME, KEY: VARIANT 1973 1.222 LOCATION: 3 .80 < .85 OTHER INFORMATION: Xaa=Tbg RES (2D MAME/KEY: VARIANT $0.83 \times 0.239 \text{ LOMATION: } 1$ 284 < 230 OTHER INFORMATION: Asp is acetylated W--> 286 <400> 16 W--> 287 Asp Asp Xaa Val Pro Cys 1 835 .191 €.100 SEQ 1D NO: 17 1902 - 112 DEDIGTE: 6 199 .H. TYPE: FAT Constitution Birth Constitution (1996) 1996 C. R. C. PEWATURE: 197 C.2D NAME, REY: VARIANT .198 (1.201 LOCATION: 1 .99 t.25 OTHER INFORMATION: Asp is accetylated BCA :400: SEQUENCE: 17 202 App Asy Lew Val Pro Cys GCB 1 5 006 (10% SEQ 10 NO: 18 $1.0 \ \mathrm{e}^{-3} \mathrm{C} \ \mathrm{F}^{-3} \mathrm{C}^{-3} \mathrm$ HOS K. 12H TYPE: PRT :09 < 132 (EGANISM: Hepatitis C JII K. DOM FERTUEF: \*12 < 21> NAME/KEY: VARIANT 613 K. 286 LOCATION: 1 크리 스크와 스펙바파 TMFOFMATION: Asp is acetylated . 16 K.COT BEOMEMOT: 18 P17 Amp Asp He Le Pro Cys 927 KITO: SEO TO NO: 39 15.00 12 5 5. Inc. TY-E: FRT of the opening and a first of SUNCERCEASE FERTURE: POSITION MANUSTRACT 928 FIRE BOCATION: 4 COME NO DESCRIPTION DE MAINTENAMENTE MAINTEN F31 < 211 NAME, KEY: VARIANT 132 ×1225 LOCATION: 1

133 <123> OTHER INFORMATION: Asp is acetylated

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 01/23/2003 PATENT APPLICATION: US/09/368,670C

TIME: 08:29:29

Imput Set : A:\Corrected sequence listing#2.txt Output Set: N:\CRF4\01232003\I368670C.raw

#### Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:6; Xaa Pos. 6 Seq#:13; Xaa Pos. 2 Seq#:15; Kaa Pos. 3 Seq#:16; Maa Pos. 0 Seq#:19; Kaa Pos. 4 Seq#:20; Maa Pos. 5 Seq#:06; Maa Pos. 5 Seq#:27; Maa Pos. 6 Seq#:18; Maa Pos. 6 Seq#:29; Maa Pos. 6 Seq#:30; Naa Pos. 6 Seq#: 41; Kaa Pos. 6 Seq#: 02; Maa Fos. 5,6 Seq#: 55; Kir Fos. 1,6 Souption; Nam Pis. 3 fleq#:56; Haa Pos. 5,5,6 Seq#: 0; Naa Pos. 1,6 Seq#:36; Kaa Pos. 1,6 Seq#:39; Maa Pos. 1,6 Seq#:40; Maa Pos. 5,6 Seq#:41; Maa Pos. 1,6 Seq#:42; Maa Pos. 5,6 Seq#:43; Maa Fos. 5,6 Seq#:44; Maa Pos. 5,6 Sea#:45; Maa Pos. 5,6 Sea#:46; Man Por. 4,5 Seq#:47; Kaa Pos. 5,6 Eeq#:48; Kaa Fos. 5,6 50g#:49; Man Pos. 5,6 Seq#:50; Kaa Pos. 6 Seq#:51; Kaa Pos. 5,6 Send#:Ell; Kaa Per. 1,6 Seq#:53; Xaa Pos. 5,6

#### VERIFICATION SUMMARY

DATE: 01/23/2003

Input Set : A:\Corrected sequence listing#2.txt
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1:66 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:3 L:112 M:/58 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:6 1::116 M:::58 W: Mandatory Feature missing, < 2::00 Tag not found for SEO ID#:6 L:110 H:308 W: Mandatory Feature missing, <3.80 Tag not found for SEQ ID#:6 L:1/1 M: 41 W: 446) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0 h:139 M:.58 W: Mandatory Feature missing, <.... Tag not found for SEO IP#:/ L:233 M:. 55 W: Mandatory Feature missing, <2.560 Tag not found for SEO ID#:15 L:234 M: 41 W: +46) "n" or "Kaa" used, for JDD ID#:13 after pos.:0 1:26" M: AF W: Mandatory Feature missing, <220 Tag not found for SEO ID#:15 L:26\* M: 41 W: 446) "n" or "Kaa" used, for SE, 10#:15 after pos.:0 L:280 M: 58 W: Mandatory Feature missing, <5.36> Tag not found for SEQ ID#:16 I::267 M::41 W::46) "n" or "Kaa" used, for SEQ ID#:16 after pos.:0 L:335 M:...18 W: Mandatory Feature missing, <2.20> Tag not found for SEO ID#:19 Libio Min41 W: (46) "n" or "Kaa" used, for SEQ ID#:19 after pos.:0 L:364 M: 38 W: Mandatory Feature missing, +1227> Tag not found for SEQ IL#:20 L:355 M:41 W: (46) "n" or "Kaa" used, for SEQ ID#:20 after pos.:0 L:44% M: 09 W: Mandatory Feature missing, 0.0000 Tag not found for SEQ ID#:26 h:44: H: 41 W: 46: "h" or "Xaa" used, for \$E€ ID#:26 after pos.:0 N:4c M:36 W: Mardatory Feature missing, NUSS Tag not found for SEc II#:27 Tide office: Wicolate " " var "Clad" work, ber 195 70#iV7 after bol..:A: Edicine Minimis W: Mandatory Readure mandring, with a Computation of the Computation  $6:48^{\circ}$  M: 41 W: 460 "h" or "Maa" used, for FET HD#:28 after bos.:0 5:5% H:.56 W: Mandatory Feature missing, 45:50% Tag not found for SEg ID#:29 5:5% H:541 W: 46% "n" or "Xaa" used, for NEQ IL#:29 after pos.:0 L:524 M:006 W: Mandatory Feature missing, <0.00> Tag not found for 3E( ID#:00 L:52: M: 41 W: (46) "n" or "Maa" used, for ABQ ID#:30 after pos.:0 L:54% M:.58 W: Mandatory Feature missing, +0.005 > Tag not found for SEQ ID#:81 L:844  $\rm H:$  941 W: 446) "n" or "Xaa" used, for SEQ ID#:31 after pos.:0 L:560 M:355 W: Mandatory Feature missing, U200 Tag not found for SEQ 10#:32 L:560 M:355 W: Mandatory Feature missing, (2000) Tag not found for SEQ ID#:92 L:56" M:341 W: (46) "m" or "Maa" used, for SEQ ID#:32 after pos.:0 L:53% M:05- W: Mandatory Feature missing, <2200 Tag not found for SEQ 10#:33 L:539 M:MSE W: Mandatory Feature missing, KMM1> Tag not found for SEQ ID#:33 1:530 M:341 W: 460 "h" or "Kaa" used, for CEQ IF#:33 after pos.:0 1:60 M:25c W: Mandatory Feature missing, <2200 Tag not found for 3EQ ID#:34 E:670 M:341 W: 460 "b" or "Waa" used, for SEQ II#:31 after pos.:0  $5:62^{\circ}$  M:21: W: Mandatory Feature missing, +22.4 Tag not found for SEQ ID#:35 1:600 M:341 W: 467 "h" or "Maa" used, for SEQ ID#:35 after pos.:0 Taginat toind for ONG 10#:36 N:646 M:256 W: Mandatory Feature missing, and is 1:630 M:250 W: Mandatory Feature missing, <2277 Tiplest found for SEQ ID#:36 niose Minte Wi Mandut iv rees see nobelia, on a Tarrit top nite 200 H#:36 Lieus Miles Wi Manara de Esta de Espara (1974), en la compositada en la compositada (1975), en 1:67 M:25c W: Mandatory Feature missing, <2202 Tag not found for 2FQ IF#:3 h:67) M:341 W: (46) "n" or "Xaa" ased, for any li#:57 after post:6 1:636 M:258 W: Mandatory Foature missing, <220. Tag not found for SEQ ID#:38 Ta:700 M:258 W: Mandatory Feature missing, <220. Terror for and for SEQ ID#:38 1:701 M:341 W: (46) "n" or "Xaa" used, for SEQ 10#:38 after pos.:0

# VERIFICATION SUMMARY

. .

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Output Set: N:\CRF4\01232003\I368670C.raw

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DATE: 01/23/2003

L:719 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:39 L:723 M:258 W: Mandatory Feature missing, <220% Tag not found for SEC IL#:39 L:724 M:341 W: '46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:0 L:749 M:Not W: Mandatory Feature missing, <2200 Tag not found for SE0 1D#:40 L:746 M:335 W: Mandatory Feature missing, <2.300 Tag not found for SE, IL#:40 L:747 H:341 W: 340 "n" or "Xaa" used, for SEQ ID#:40 after pos.:0 L:765 M: 35 W: Mandatory Feature missing, <2200 Tag not found for SE[ ID#:41 L:769 M: 18 W: Mandatory Feature missing, <2800 Tag not found for SET ID#:41 L:7.. M:541 W: 460 "n" or "Xaa" used, for SEQ ID#:41 after pos.:0 L:7% M: M: Mandatory Feature missing, <2.00 Tag not found for SE, IF#:42 L:782 M: C: W: Mandatory Feature missing, <2200: Tag not found for SEQ ID#:48 L:733 M:341 W:~(46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:0 L:311 M: M: W: Mandatory Feature missing, CLMD: Tag not found for SEQ ID#:45 L:813 M:.53 W: Mandatory Peature missing, C2233 Tag not found for SEQ ID#:43 L:816 M: 41 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0 L:834 M:258 W: Mandatory Feature missing,  $\langle \text{CM} \rangle \text{Tag not found for SEQ-ID#:44}$ L:834 M: 58 W: Mandatory Feature missing, (2200) Tag not found for SEQ ID#:44 1:834 M: 446 Wr or "Xaa" used, for SEQ ID#:44 after pos.:0 1:857 M:35 W: Mardatory Feature missing, 400% Tag not found for SEV IF#:45 ilsel Micho Wi Mardutory bestyre blooming, cost Tag not found for SEC ID#:45 Direct Hirds with Account of "Had" most, That it is Committee of the second section Libit Mills W: Mandatory Feature missing, which Tag not found for SEC ID#:46 Libi4 M: Lo W: Mandatory Feature missing, Chill Tag not found for SEC ID#:46 L:3:5 M: 41 W: 446) "n" or "Xaa" used, for 3EQ ID#:46 after pos.:0 L:978 M:.19 W: Mandatory Feature missing, <2.200 Tag not found for SEQ ID#:47 L:907 M:.58 W: Mandatory Feature missing, <2.200 Tag not found for SEQ ID#:47 L:9[8 M: 41 W: 446) "n" or "Xaa" used, for SEQ ID#:47 after pos.:0 L:936 M: 38 W: Mandatory Feature missing, <2330 Tag not found for SEQ ID#:48 L:900 M:000 W: Mandatory Feature missing, <2000 Tag not found for SEQ 1D#:48 1:951 M: 41 W: .46) "n" or "Xaa" used, for SEQ 40#:48 after pos.:0 L:94) M: 58 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:49 L:954 M: 41 W: 46) "n" or "Maa" used, for SEQ ID#:49 after pos.:0 L:973 M:541 W: (46) "n" or "Xaa" used, for SEQ ID#:50 after pos.:0 1:496 M:341 W: (46) "n" or "Xaa" used, for SFQ ID#:51 after pos.:0 L:1019 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50 after pos.:0 1:1042 M:54: W: (4m) "h" or "Xaa" used, for SMQ TIM:53 after pos.:0